

REMARKS

The above-identified application is United States application serial number 10/737,374 filed on December 16, 2003. Claims 1-16 and 18-37 are pending. Claim 17 has been canceled. Claims 1-16 and 18-37 are rejected. Applicant respectfully traverses these rejections.

Claim Rejections - 35 U.S.C. § 112

Claims 18-19 are rejected under 35 U.S.C. 112 as being indefinite. In response, Applicant has amended claims 18 and 19 to depend from claim 10 instead of canceled claim 17. Removal of the rejection of claims 18-19 under 35 U.S.C. 112 is respectfully requested.

Claim Rejections - 35 U.S.C. § 103

Claims 1-5, 7-13, 16, and 18-19

Claims 1-5, 7-13, 16, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung *et al.* (US 6,195,760) in further view of Pandya (US 2004/0037319) in further view of Tsirigotis *et al.* (US 6,883,068). Applicant submits that the suggested combination is the result of the unallowable use of hindsight, as evidenced by the combination of references pertaining to different types of computer memory and different purposes for the different types of memory. In the present instance, Chung teaches the use of non-byte addressable memory for storing checkpoint data for backup processes. (Chung, col. 4 lines 41-48). Pandya teaches a TCP/IP processor and data processing engine that uses byte addressable RDMA memory, but not the use of meta-data or storing data for backup purposes. (Pandya, Abstract). Tsirigotis pertains to creating a backup of cache memory on non-volatile memory, in particular a disk-drive, that can include meta-data. (Tsirigotis, col. 4 lines 16-35). Applicant submits that those skilled in the use of cache memory are aware that the contents of cache are temporary and consist only of frequently accessed information. (Tsirigotis, col. 1 lines 49-52) One seeking to improve the performance of

storing and accessing checkpoint information would not seek information from sources regarding cache memory such as Pandya because there is no guarantee that the checkpoint information will be available when a primary process fails. (See <http://en.wikipedia.org/wiki/Cache> for a description of cache operation). Additionally, Pandya teaches that the host application registers a memory region that it wishes to use in RDMA transactions and communicates this information to a peer application on a remote end. (Pandya, para. [0124], page 15, second column, lines 9-16). There is no reason for Pandya or Chung to implement metadata or access information according to Tsirigotis because Pandya already teaches a host application providing information regarding the RDMA memory to the peer application. *Id.* Applicant accordingly submits that the references are only being combined as a result of impermissible hindsight and the subject matter of claims 1-5, 7-13, 16, and 18-19 is not obvious over the combination of Chung, Pandya, and Tsirigotis.

Claim 18 is further distinguishable from the cited references because the cited portion of Tsirigotis does not teach or suggest "establishing a connection to a process requesting access to the checkpoint data; and binding the access information to the connection." Instead, Tsirigotis teaches using the HTTP protocol to handle message passing between a client and server, but does not teach or suggest establishing a connection or binding the access information to the connection. (Tsirigotis, col. 1 lines 34-47).

Claim 6

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chung *et al.* (US 6,195,760) in further view of Pandya (US 2004/0037319) in further view of Tsirigotis *et al.* (US 6,883,068) in further view of Wang (US 7,082,553). Claim 6 depends from claim 1 and is distinguishable from the cited references for at least the same reasons as claim 1 provided hereinabove.

Claims 14-15

Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung *et al.* (US 6,195,760) in further view of Pandya (US 2004/0037319) in further view of Tsirigotis *et al.* (US 6,883,068) in further view of St. Pierre *et al.* (US 6,141,773). Claims 14 and 15 depend from claim 10 and is distinguishable from the cited references for at least the same reasons as claim 10 provided hereinabove.

Claim 20

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chung *et al.* (US 6,195,760) in further view of Pandya (US 2004/0037319) in further view of Tsirigotis *et al.* (US 6,883,068) in further view of Ho *et al.* (US 2002/0073325). Claim 20 depends from claim 10 and is distinguishable from the cited references for at least the same reasons as claim 10 provided hereinabove. Further, the cited references do not disclose or suggest the features of claim 20 including "authenticating a persistent memory manager during initialization of address protection and translation tables on the persistent memory unit." Instead, Ho teaches a software protection program that includes a signature engraving program, a signature authentication program, and an engraved signature, but does not disclose or suggest that a persistent memory manager is authenticated during initialization of address protection and translation tables on the persistent memory unit. Making a legitimate copy of a backup program as taught in Ho has no relevance whatsoever with the features of claim 20. Claim 20 is distinguishable from the prior art for at least these additional reasons.

Claims 21-23 and 25

Claims 21-23 and 25 are rejected are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung *et al.* (US 6,195,760) in further view of Stiffer *et al.* (US 6,622,263) in further view of Pandya (2004/0037319).

Independent claim 21 recites "computer executable persistent memory manager instructions...operable to: authenticate requests from remote processors, and provide access information to authenticated remote processors based on address protection

and translation tables in the persistent memory unit, the access information includes meta-data regarding the contents and layout of memory regions within the persistent memory unit". In contrast, Pandya teaches that the host application registers a memory region that it wishes to use in RDMA transactions and communicates this information to a peer application on a remote end. (Pandya, para. [0124], page 15, second column, lines 9-16). Claim 21 is distinguishable from the prior art for at least these additional reasons.

Claims 22-25 depend from claim 21 and include features that further distinguish them from the prior art.

Independent Claims 26, 32, and 35

Claim 26 is rejected are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung *et al.* (US 6,195,760) in further view of Stiffer *et al.* (US 6,622,263) in further view of Pandya (2004/0037319).

Claims 32-33 and 25-37 are rejected are rejected under 35 U.S.C. 103(a) as being unpatentable over Chung *et al.* (US 6,195,760) in further view of Pandya (2004/0037319).

Independent claims 26, 32, and 35 recite "receiving access information to physical addresses of checkpoint data in the persistent memory from the persistent memory unit". The cited references, alone and in combination, do not teach or suggest receiving access information to physical addresses of checkpoint data in the persistent memory from the persistent memory unit. The host application, not the RDMA engine, provides information regarding the RDMA memory region to a peer application in Pandya. (Pandya, para. [0124], page 15, second column, lines 9-16). Applicant further submits there is no reason for Tsirigotis to provide information regarding the cache memory to another host application because the cache memory is only useful to a particular host application and is not shared with other host applications, backup or otherwise. Claims 26, 32, and 35 are distinguishable from the cited references, alone and in combination, for at least these reasons.

Claims 27-31, 33-34, and 36-37 depend from respective claims 26, 32, and 35 and include features that further distinguish them from the prior art.

CONCLUSION

The application, including claims 1-16 and 18-37, is believed to be in condition for allowance and notice to that effect is solicited. Should any issues remain that might be subject to resolution through a telephone interview, the examiner is requested to telephone the undersigned at (949) 350-7301.

I hereby certify that this correspondence is being transmitted to the USPTO via electronic filing on the date shown below:

/Mary Jo Bertani/
(Signature)

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June 16, 2008
(Date)

Respectfully submitted,

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